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AGRICULTURAL MEMORANDUM NO 840

SPRING FROSTS AND BLACKCURRANTS

Although frost damage can occur in March and May it was convenient just to examine April in detail if only to cut down the time required for the investigation. In coarse terms, the means of the daily minima for the month give a measure of the frost frequency - the number of frosts is high when the mean is low and vice versa - but damaging frosts are not entirely excluded when the mean minimum is high. Looking at the minima for April back to 1921 at Edgbaston and Long Ashton one feature stands out and that is there were 8 out of 10 Aprils in the "Forties" which were warmer than the long term average and that since the mid-Sixties the mixture has tended towards the sort of mixture experienced in the Twenties. The occurrence of damaging frosts in 2 successive years 1977 and 1978 was NOT unique; a similar sequence occurred in 1967 and 1968 and according to Mr Moulton of Beechams led to the plant breeding programme from which some of the results were being displayed at Luddington.

If one turns to means of mean daily temperatures rather than daily minima similar features show through. These means were averaged over each nominal decade and are shown in the attached diagram (earlier data for Oxford do exist, but were not to hand at time of preparation of the note). The warm Aprils of the 1940s show up, and it may be seen that the mean temperature for April over 10 years is back where it was earlier in the century. It may be said with a fair degree of confidence that the warm sequence of the Forties was the oddity not the present sequence.

Means of daily mean temperatures for March show a similar pattern to that of the April mean temperatures but there is much less of a warm peak. The falling trend appears to have been halted and there seems to have been a slight rise over the most recent period. From the point of view of frost damage to fruit blossom this development is disquieting because with relatively warmer Marches buds will be at a sensitive stage earlier, and while Aprils are relatively cold damage might well occur more often. It must be emphasised that this is not a prediction; it is one of the possible combinations of future spring temperature sequences. Put in another way the combination seems to be thus: if the 10 year average of the mean daily temperature for March remains the same or is a little higher than in recent years, then in more than half the years in the coming decade many soft fruit varieties will be at a sensitive stage by the end of March; and if the 10 year average of the mean daily temperature for April remains the same or is a little lower than in recent years than in more than half the years in the coming decade some damaging frosts are likely, and there seems a fair liklihood that in 3 or 4 years the warm Marches may be followed by the cold Aprils. The sequences cold March cold April and cold March warm April - are less likely to produce frost damage because the plants ought to be at a less sensitive stage.

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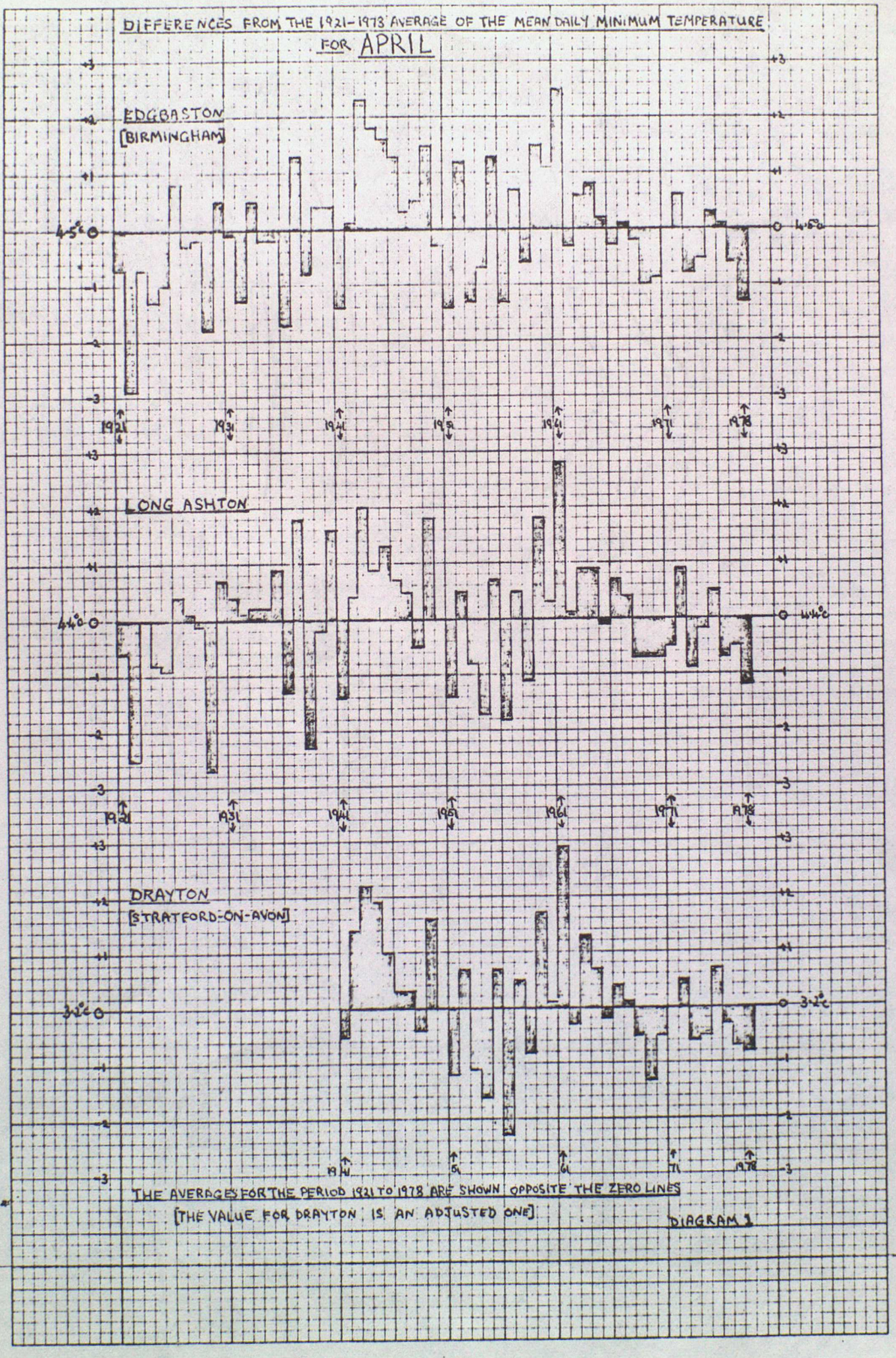
DIFFERENCES FROM THE 1921–1978 AVERAGE OF THE MEAN DAILY MINIMUM TEMPERATURE FOR APRIL
EDGBASTON [BIRMINGHAM]
4·5°C
4·8°C
LONG ASHTON
4·4°C
4·4°C
DRAYTON [STRATFORD-ON-AVON]
3·2°C
3·2°C
1921
1931
1941
1951
1961
1971
1978
+3
+2
+1
0
-1
-2
-3
THE AVERAGES FOR THE PERIOD 1921 TO 1978 ARE SHOWN OPPOSITE THE ZERO LINES
[THE VALUE FOR DRAYTON IS AN ADJUSTED ONE]
DIAGRAM 1

A4 →